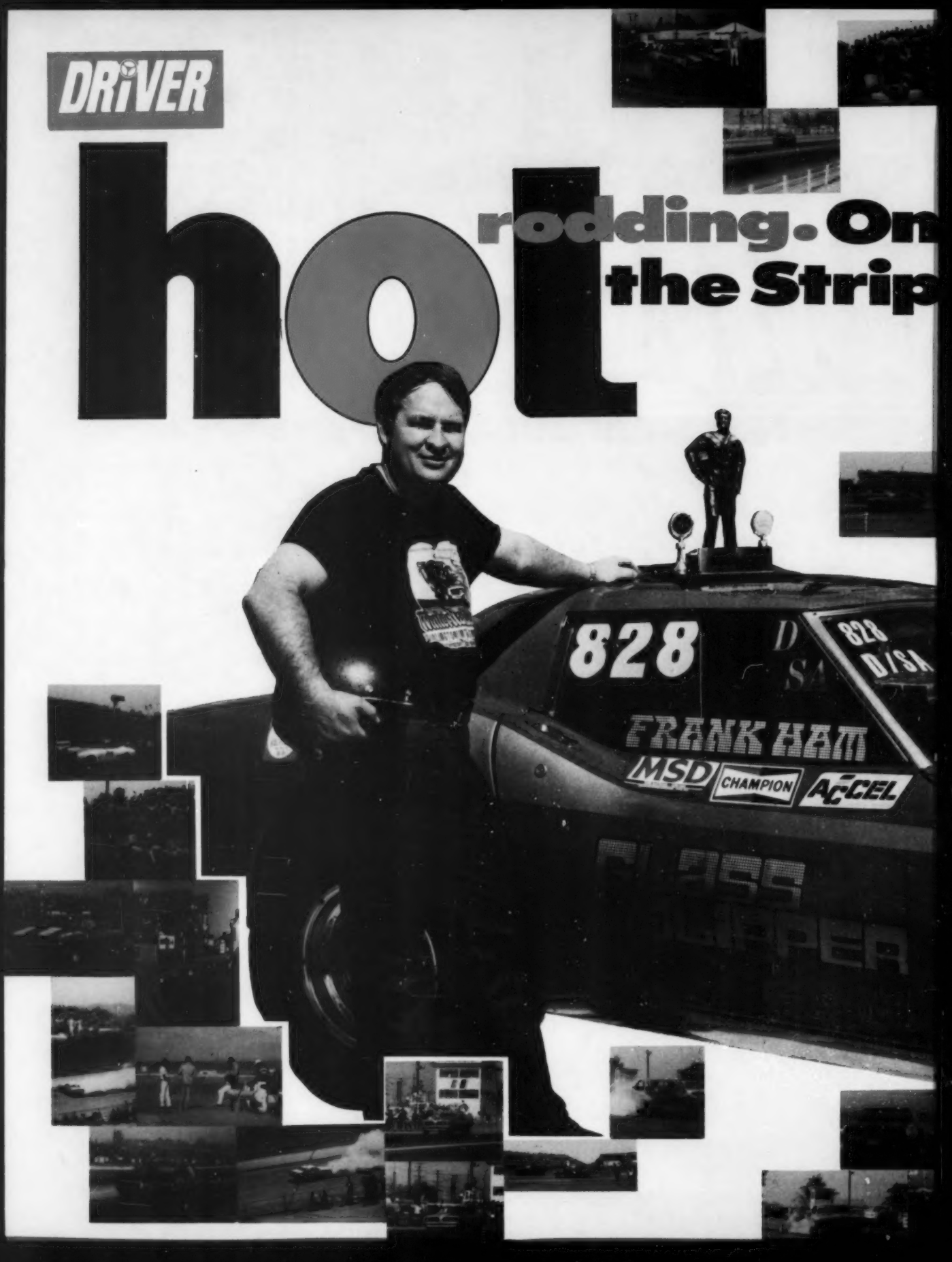
HOT DRIVER

HOT rodder

JUNE 1979

sparking

plots


DRiVER
hot
rodding. On
the Strip
828
FRANK HAM
MSD
CHAMPION
ACCEL

by SFC RON FREEMAN, USA
Fort Bragg, N.C.

Photos by SSG PAUL HILL

not the Street

Army Captain Frank Ham became the stock class eliminator at the International Hot Rod Association Winternationals in Darlington, S.C. Ham, driving his 1972 "Glass Slipper," clocked in at 11.71 seconds (114 mph) through the quarter mile.

The "Glass Slipper" is a 1972 fiberglass body Corvette. It sports a 454-cubic-inch engine, one 4-barrel carburetor, and 9-inch-wide slicks. The D Stock Automatic drag car faced over 100 top-notch machines from across the nation.

Ham began his racing career on a small air strip near Deer Park, Washington in 1957. Although this is his first national championship, his 430 horsepower Corvette has won several class titles in the past few years.

While assigned to Fort Hood, Texas, he managed the "Go Army" racing team which drove the "Modern Volunteer Army" message across America in 1973 and 1974. The Captain is now with the U.S. Army Institute for Military Assistance at Fort Bragg, where he works in the Directorate of Training Developments.

We asked him to pass on some tips to DRIVER readers about modifications to street machines, and here they are:

Tires: Don't run over-sized tires if you have to modify your suspension to make them fit. *Reason*: If you need air shocks to raise your car body to clear over-sized tires, you face the risk of broken lines or air leaks letting the car down and slashing into your tires. *Tip*: You can still run larger tires but make sure they don't rub against any part of the suspension or chassis.

Never run slicks on the street. In most states this is against the law but, more important, you face real danger. *Reason:* Slicks have zero traction on wet pavement. The side walls are only one-ply construction, which means they roll under the wheel on a curve or puncture if you clip a curb.

Wheels: Almost all "mag" wheels are safe for street or the strip. *Tip:* Read the manufacturer's brochure and ask

continued

(left)
Captain Ham and the "Glass Slipper" with the trophy they took at the International Hot Rod Association Winternationals.

DRIVER

THE
TRAFFIC SAFETY MAGAZINE
FOR THE MILITARY DRIVER

DEPARTMENT OF THE AIR FORCE
HQ AIR FORCE INSPECTION AND SAFETY CENTER
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JUN

VOLUME 13 NUMBER 1

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THE EDITOR SPEAKS
DOUBLE CLUTCH

If You Have a Small Child

Experts on child-restraint systems have long agreed about the dangers of on-lap travel for small children, but until recently there has been little data to support their opinions.

Now a research project supported by the Insurance Institute for Highway Safety has shown that it is NOT possible for adults to adequately restrain children in their laps by holding on to them. The tests involved a dummy weighing 17.4 pounds representing a six-month-old child. They showed that the forces that lap-and-shoulder belted adults can exert in holding an infant dummy in their laps are far less than the inertial force exerted by a 17-pound child decelerated at more than 30 G's. In a frontal crash at 32 mph, the infant would amost certainly fly into the dash or windshield, despite the adult's best efforts to clasp the child tightly.

If the adult is unrestrained, the child he is holding is likely to be impacted on one side by the car interior and on the opposite side by the adult. These crushing injuries can be greater than if the child were seated alone and unrestrained.

Tennessee has been widely applauded as the first state to pass a child restraint law. Unfortunately, Tennessee's law permits children under four to be held on the laps of adults as an alternative to the use of a proper restraint system. At least 18 additional states are considering child-restraint laws. No doubt this new test data will influence their eventual legislation. Meantime, if you have a child under four, buy him an approved restraint system. Until you do, have him ride in the back seat.

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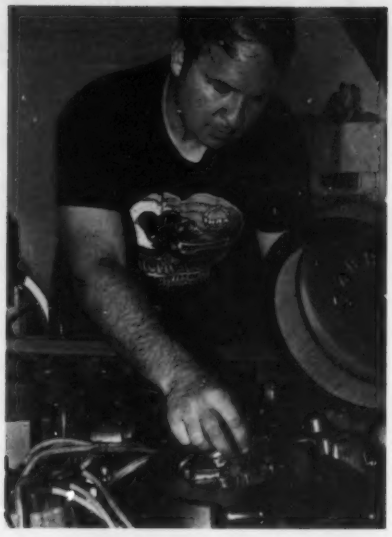


A well-maintained, well-tuned engine is only part of getting good gas mileage in your street machine. Equally important, says Ham, is *how* you drive.

before you buy. *Reason*: There are a few models on the market that are strictly for the track. This may sound great, but it won't give your machine any extra horsepower. It may give you some problems though, because "mags" for the strip are light-weight, thin and are not designed to withstand the impact they will receive on the open road.

Exhaust Systems: Headers and dual exhaust will definitely increase horsepower and gas mileage, but set up your system safely. A few extra bucks may save your life. *Tip*: Don't have your headers dump directly out of the mufflers. Make certain that the exhaust is routed outside or behind the car. *Reason*: Life and death. Carbon monoxide is deadly!

Traction Bars: This is probably one of the biggest mistakes you can make in modifying your street machine. *Tip*: Don't put traction bars on a street machine. *Reason:* Traction bars are a must for the strip. They increase take-off and help in braking. On the street they create several safety problems. First, they kill the car's suspension. On washboard or rough roads the traction bars restrict your leaf springs from doing their job and your car will move laterally or skate off the road. Secondly, prolonged use of traction bars will cause the leaf springs to break near the eye because this is the center of stress. Finally, traction bars hang too low. They hit rocks, curbs, you name it. Normally your traction bars will only ride about six inches off the pavement. *Tip*: Neat for the strip but not for the street. Save your money!

Gas Mileage: Many people have the impression that a high-performance street machine is a gas guzzler. It doesn't have to be! Actually, some of the things that make a good race car also make an efficient money-saving street car. *Tip*: Electronic ignitions, fine tuning, exhaust headers with dual exhaust, free flowing intake manifold, good spark plug wires and plugs will all add to fuel economy. The secret in gas mileage, once the engine is tuned and properly cared for, is the driver. *DON'T remove your auto's emission control system. It is not only against the law but can actually decrease your gas mileage.*

We also asked Captain Ham about Corvettes, both on the street and on the strip. He observes:

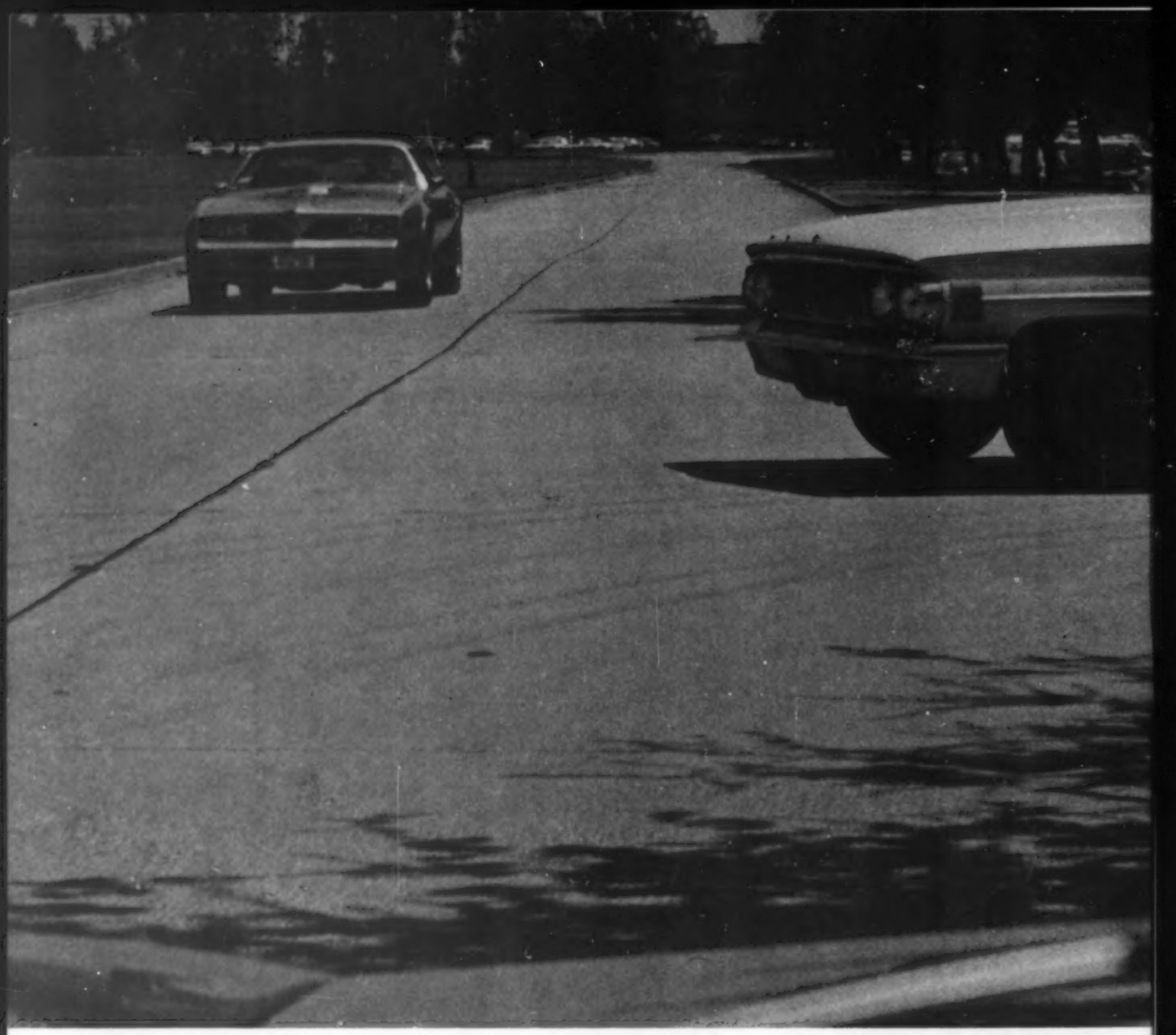
Many people are skeptical about fiberglass car bodies, but it seems to me that metal bodies bend and fiberglass bodies break at about the same rate. We have learned from racing that the secret to safety in an auto crash is wearing your safety belt to keep you in the car and out of the windshield. After that, the construction of your auto's frame is more important than the outside skin of the body.

The Corvette is excellent for the street because of the independent rear suspension. This means each wheel operates independently.

Corvette was *the* American performance car and its era is just about gone. For this reason, Corvettes manufactured between 1953 and 1967 have increased in value unbelievably in the last couple years. A rare split window 1963 Stingray with fuel injection might bring $20,000 today.

On the strip, the Corvette provides excellent traction because of the independent rear suspension. Aerodynamically the body designs have always been slippery. Good weight distribution. Engine and transmission are about 15% farther back than other American-made autos.

On the street Captain Ham drives a Custom Chevy Van with over 20 modifications to the engine and the interior –all safe and sound.



Here's a nice example of the near-accident. Car number 1, the four-door sedan, has emerged from the parking lot too fast and without looking. The driver has had to brake to avoid being hit by car number 2, the muscle car, and car number 3, in which your humble DRIVER photographer is sitting. The aforementioned DRIVER man has also had to brake to avoid car number 1.

How often have you had a near-accident? You *almost* got side-swiped by a truck; you *almost* rear-ended another car; you *almost* collided with a motorcycle at an intersection.

You may or may not have an auto accident during your driving lifetime. But during this same driving career, you'll be involved in many "close encounters" that end just short of becoming accidents. Not a pleasant thought, especially when you realize that any one of them could just as easily *be* an accident.

These things are nothing to get concerned about to the point of ulcers. After all, they happen to everybody, and they are caused by an endless number of circumstances – a dog runs out in front of you and you are nearly rear-ended as you brake; a car from the opposite direction makes a left turn in front of you . . .

But now we're not talking about the near-accidents caused by other drivers (or Fidos). The only thing you can do to avoid these is to give others all the space you can manage, and be very alert for a way to maneuver around a tight spot. What we're concerned with here are the near-accidents you cause yourself, and what you do about them.

"What do you mean, 'do about them'?" you ask. "The accident didn't happen – I just go on my way and don't let it bother me."

Well, as we said, don't get an ulcer.

the near-accident

But you should think about the "close encounter" itself. You made a mistake and it nearly caused a collision – say for example you emerged very fast from a parking lot and somone had to brake to avoid you. Perhaps it was a one-time-only mistake – not something you do every day. But on the other hand, what if it *was* a thing you do every day, a mistake you make over and over? If you zipped out of that parking lot after having decided to "take a chance," that's one thing – and a bad one. But if you did it without thinking about it, perhaps

continued

Learn from your mistakes—please.

ALMOST but not Quite

that's how you *always* exit parking lots. And perhaps it's just luck that someone hasn't come close to hitting you before. How's that make you feel?

Let's take another example (a true one, by the way): As a teenager, Lt Adam Sapple flunked his first driving test because he failed to look over his shoulder when he was making a lane change. He became conscious of the error, re-took the test and got the license. However, when he relaxed, he forgot. In later years, he was involved in three near-accidents because of this same fault – unconsciously failing to look over his shoulder for a lane change.

This is the familiar "What's the fine print say on his license plate" technique, otherwise called tailgating. If our man isn't careful, his car will take a bite out of that other car's trunk.

Like this guy did. Only split seconds and fractions of inches separate near-accidents from real ones.

What we're leading up to is this: What do you learn from making these mistakes, from the near-accidents you've had? Do you make an effort to correct your driving faults, or do you continue to make them? The near-accident is a bad enough occurrence. But if you repeat the same mistake that leads to the same almost-a-collision, how long do you think it'll be before your luck runs out and you cause a *real* accident?

You can turn these near-accidents into valuable learning experiences that will help you to correct your mistakes. Mistakes of this kind are usually unconscious – you weren't thinking, or you wouldn't have done anything so careless. So it will take conscious effort to correct them.

First you have to discover the cause of the problem. Think about the times you've almost collided with another car. Were the reasons something totally out of your control, like the dog we mentioned, or the maneuvers of another driver? Or were the mistakes your own? If you discover you have almost caused accidents because of some error you make again and again, you have to alter your performance *now*.

Once you've become aware of the cause of mistakes, you might need a reminder to keep the fault in your conscious mind. A real collision could remind you, but that defeats the purpose. You know best what will remind you of something you need to recall. Maybe a note taped to the dashboard of the car – "Don't tailgate!" Or a rubber band around your wrist.

What it'll take basically though, is a *change in attitude*. You'll have to tell yourself "I've been doing something pretty stupid and I'll have to change if I don't want to flatten my car, and *myself*." It's the same as with *any* fault – first you become aware of it, and then you change it.

In near-accident cases you *have* to change the fault. The tailgater who keeps telling the same "near-accident" story – "I stopped, I swear, about *three inches* from that guy's bumper!" – will either change or find the guy's bumper in his lap.

shoulder belt check

We all know the shoulder belts in most late model cars do not lock up when the strap is pulled. Consequently we bet our lives on seat belts that are supposed to work . . . but are we sure they will? This is especially true with the shoulder strap that is supposed to keep you out of the windshield in the event of an accident.

Belt manufacturers perform a whole series of tests on a percentage of each batch of belts produced. Independent testing firms, automobile manufacturers, even the Department of Transportation also test belts. Odds are high that belts will work when called upon. But nothing in this world is perfect. Things also break and wear.

You can't check your shoulder belt by just pulling on the strap. It doesn't lock up like the older model inertia-type retractor did. It will just unwind from the retractor. It's designed that way so you can lean forward.

Most late model cars – 1975 and later – have a pendulum in the retractor. When the car is decelerated (stopped) suddenly, like a panic stop or a head-on collision, the pendulum swings forward and locks the belt.

You can check your own belts, and you don't need any special tools except a screwdriver to do so.

Remove the trim that covers the retractor. The trim is usually attached with cross-head screws.

When you remove the trim the retractor will be exposed. Now push the pendulum toward the front of the car with your finger. Pull on the shoulder strap. The strap should lock up.

Do the same thing, only pushing the pendulum toward the rear of the car. It should lock up again.

If the shoulder belts pass these tests, you can bet your life on them.

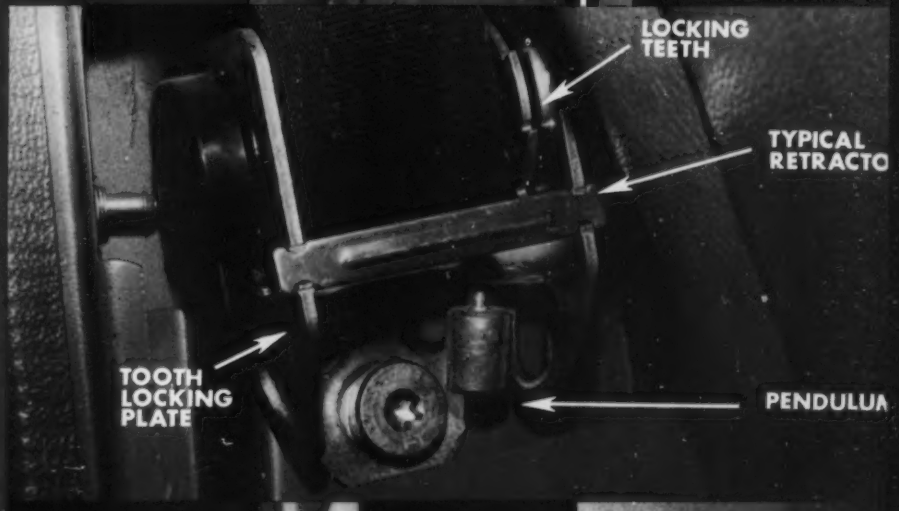
If they don't pass, it's time to get new ones.

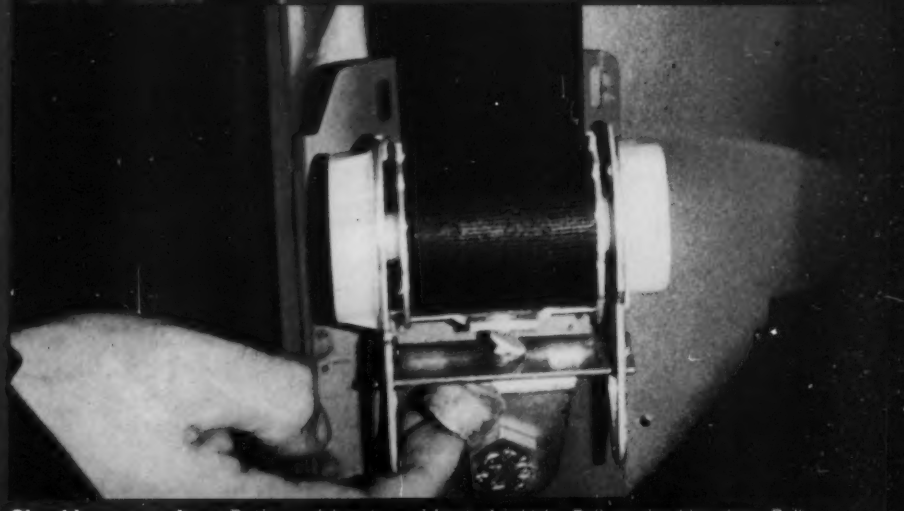
by JAMES N. BOBLENZ, Commander
U.S. Army Tank-Automotive
Materiel Readiness Command
Warren, Michigan

Photos by the author

(right)
Typical side wall-mounted shoulder strap.

(far right)
Typical floor-mounted belt.





Checking procedure: Push pendulum toward front of vehicle. Pull on shoulder strap. Belt should lock up. Repeat procedure, only push toward rear of vehicle.

April Fool's Day
has come and gone . . .
but not at DRIVER!
1914
1926
1927
1936
1939
1941
1955
1957

THE 4TH ANNUAL DRIVER TRIVIA ✻ NOSTALGIA TEST

by THE BACKWARD MECHANIC

1. Where is the gas cap and fuel filler located on the following cars?

   A. '56 Cadillac
   B. Jaguar XJ-6
   C. Renault R-10
   D. MG-TD

2. The 1912 Cadillac had electric headlamps . . . the 1912 Packard didn't. What was the source of the light coming from the Packard's headlamps?

3. Which of the following car names are real, and which are made-up by our wild and crazy staff?

   A. Minerva
   B. Amilcar
   C. Cole
   D. Daniels
   E. Elmore

4. Who has the very latest entry into the 4-wheel drive sweepstakes? We'll give you a hint . . . it's *not* Subaru, Chevy, or Toyota.

5. Discounting the normal route of air flow through the carburetor and intake manifold, how many ways can air get into a cylinder/combustion chamber?

6. What percentage of engine cooling is accomplished by water (in a water-cooled engine, of course)?

7. Rolls-Royce used to have a factory in America, even though we drove on the "wrong" side of the road. R-Rs were produced there from 1921 through 1931. Where was this factory?

8. The nameplate on an Oldsmobile used to read "Olds Motor Works," and then have the name of a town. What was the name of that town?

9. What do experts generally consider to be the worst place in a passenger car to carry or mount a fire extinguisher?

10. When America was transitioning from the horse to the horseless carriage, old habits died hard. What did the 1911 Mercer have that was a carry-over from the early days?

11. What car had as its motto: "La Premiere Voiture Francaise Construite En Grande Serie"?

12. When windshields first came on the scene, they weren't called windshields . . . what were they called?

13. What production car had an engine that displaced 13 litres (793¼ cubic inches), an engine block over four feet, seven inches long, and had a wheelbase of almost 170 inches?

14. What 1919 automobile had an extra seat which pulled out from the body like a drawer?

15. How did the Boxer Ferrari get its name?

continued

trivia-nostalgia test

continued

16. When inflating a tubeless tire to re-seat the bead after a repair, what is the highest air pressure (in psi) that should be applied to the tire?

17. In 1932, Ford Motor Company offered a V8 called the "60." Later on they introduced the "85." What did these numbers mean, and in what year was the "85" introduced?

18. Aside from a flat-six engine, what design feature set the Tucker Torpedoe automobile apart from its post-war competitors?

19. Almost everyone knows who won the inaugural Indy 500 in 1911. It was Ray Harroun in a Marmon. But who won the 1912 Indy 500?

20. Is gasoline acceptable as a cleaning solvent?

ANSWERS

1. A. Behind the left tail light. I always wondered what would happen in the event of an arc from a corroded lamp socket.

B. On top of the rear fenders, just behind the rear window and on each side. Sloppy gas station attendants caused much joy among auto body repainters.

C. Under the "hood" (rear deck) of this rear-engined car, right next to the radiator fill pipe. I know gas pump jockeys who get hives just thinking about putting gas into the radiator or having gas spill from the gas filler onto the hot engine.

D. On top of the fake "trunk." Actually, it wasn't a fake trunk . . . it was a gas tank designed to look like a trunk . . . literally.

2. Acetylene gas. Water was dripped onto calcium carbide to make the gas which was then burned in the headlamps.

3. Why, all of them are real, of course. We can't kid a bunch of kidders, can we?

4. The Mercedes-Benz G Series. It's available in five basic body styles and four different engine configurations. Just the thing for commuting to your lodge in Aspen.

5. Five ways. (1) past the valve guides, (2) past the rings, (3) past the head gasket, (4) past a bad intake valve, or (5) through a cracked cylinder head (in an air-cooled engine).

6. About 60%. Oil provides about 35% of the cooling, and air provides the other five percent.

7. Springfield, Mass.

8. Lansing, Michigan.

9. The trunk.

10. Stirrups.

11. Citroen

12. Glass-fronts.

13. The Bugatti Royale.

14. The Kissel Gold Bug.

15. It was called the Boxer because of its box-shaped, flat-12, horizontally-opposed engine.

16. 40 psi. If the bead won't seat at that pressure, deflate the tire, reapply rubber lube to the bead surface, and re-inflate. Never use more than 40 psi to seat a tire bead.

17. The V-60 and -85 referred to the horsepower of the engine. The -85 was made available to the public in 1937.

18. It had a third headlight, placed in the center of the grille, that pivoted left or right as the wheels were turned.

19. Joe Dawson, a hometown boy from Indianapolis.

20. NO, NYET, NICHT, NON, UH-UH, NO WAY, etc., etc., etc.

SPECIAL NOTICE

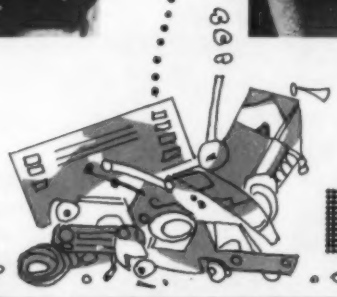
Seat Belt use in Germany

The German Federal Supreme Court has ruled that, from a medical and technical point of view, motor vehicle occupants who use seat belts have a considerably reduced risk of injury. Therefore, motorists injured in a motor vehicle accident who failed to use their seat belts are presumed to be guilty of negligence. They must accept a reduction of any claim for damages, EVEN IF THE ACCIDENT WAS NOT THEIR FAULT.

This ruling does affect members of the U.S. forces and their dependents. If you or your dependent is involved in a motor vehicle accident within the Federal Republic, German law will apply. Both out-of-court settlements with insurance companies and court decisions will consider the implications of seat belt use in damage claims.

Under German law, a motor vehicle operator is required to do all things in his power to avert or mitigate damage. Failure to do so will affect the determination of fault and consequently the amount and type of compensation awarded. Under the new interpretation, failure to use seat belts is considered to be failure to avert or mitigate the damage.

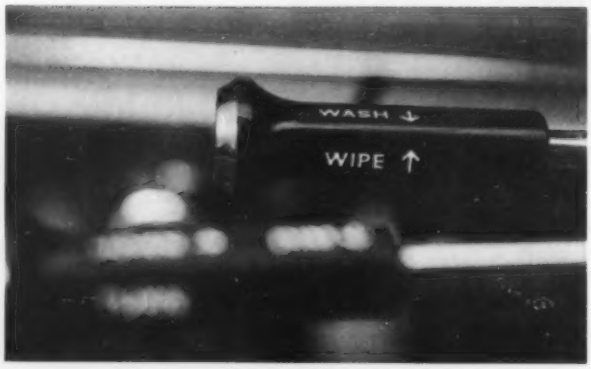
Quick! WHERE'S THE HORN BUTTON?



What do you do if you need the horn in this '79 Ford Fairmont staff car? If you had the time to look around, you'd find it on the end of the directional signal stalk on the left of the steering column. But what if you don't have the time? What if someone is backing out of a parking space, right toward you, and you want to politely inform him or her that a backing accident is about to take place? You punch the center of the steering wheel and nothing happens!

When you pick up a car or truck from the motor pool, you have to make a thorough inspection . . . that's the law. But an inspection should always include a short time sitting in the seat and familiarizing yourself with the car's control layout.

You adjust the mirrors, buckle the safety belts, adjust the seat, and look for the parking brake release. But you should also take the time to find out where the headlight, windshield wiper, heater, and horn controls are. It takes only a few seconds, but those seconds could prove invaluable when you need them for other things . . . like controlling the car.



As more new cars and trucks enter the system, you'll be seeing more and more new locations of vehicle controls as manufactureres convert to new equipment locations. Vehicle dispatchers should be aware of this problem and should take time to inform drivers that control locations on a particular vehicle are different. Drivers should completely familiarize themselves with new or different vehicles before they ever leave the parking lot.

Timely Topics

YELLOW LENS DRIVING HAZARD

Recently, the Optometry Specialist Course personnel at the School of Health Care Sciences came across an advertisement for newly designed yellow lens glass that, when used for driving at night or in a fog, reportedly improves night visibility. Advertisements of this sort can, and often do, create a safety hazard for the uninformed public. Wearing tinted lenses at night can be dangerous.

Your eyes have two different sensitivities, one for daylight or normal light and one for nighttime or reduced light. During the day, you are most sensitive to yellow light while at night you are most sensitive to blue light. The lenses in the advertisement absorb blue light and consequently reduce your visual efficiency at night. In addition, untinted (or plain) spectacle lenses absorb and/or reflect 4% to 8% of the light that strikes them.

Adding a color to the lenses reduces even further the amount of light that reaches your eyes because most tinted lenses absorb and reflect at least 15% of the light that strikes them. A 15% decrease in ambient light combined with a reduction in visual efficiency are serious matters when driving an automobile at night. Instead of allowing you to see better, the lenses described in the advertisement could restrict your vision enough to cause you to have an accident.

If you have questions about tinted lenses and whether or not you should wear them, go to your local eye clinic and see the optometrist or ophthalmologist. These people are experts and they will be able to advise you on the proper usage and precautions of wearing tinted lenses at night.

NOW YOU SEE IT, NOW YOU DON'T

Here's a *little* lesson in the *Theory of Auto Relativity*: You're out for a spin and another car is coming at you at 44 mph. You see it, so you know exactly where it is—right? Wrong. At 55 mph the other car is approaching you at over eight feet per *tenth* of a second. The one-tenth second is crucial. Researchers say there is a one-tenth second time lag in eye-to-brain communication in actual driving situations. *That means that by the time you perceive the other car, it has already moved eight feet from the spot where you think it is . . .* Better be careful. . . .

(Texas Office of Traffic Safety)

GM RECALLS—STEERING PROBLEM

The Transportation Department has announced the voluntary recall by General Motors Corp. (GM) of 172,000 of its 1977 and 1978 Chevrolet Monza, Pontiac Sunbird, and Oldsmobile Starfire cars to correct a steering problem. The recall applies only to cars equipped with L-4, 151 CID engines.

GM reported that a deformation of the engine mount support structure will make steering increasingly difficult. Ultimately, difficulty may occur in returning the steering wheel to a straight ahead position after a sharp right turn.

No accidents or injuries have been reported to Transportation, but owners are encouraged to have their cars corrected as soon as they are contacted by the manufacturer.

NEED ADDITIONAL NOISE SUPPRESSION IN YOUR CAR STEREO?

Dave Walker, of Champion Spark Plug Co., has found a noise eliminator device which really aids in the suppression of R.F.I. from alternators. This is generally a high-pitched noise which varies with engine speeds.

The device is a 4 MH choke coil which is spliced into the "hot" wire between the battery and stereo, tape player or C.B. radio.

The choke coil should be available at most electronics stores.

(Courtesy Champion Service Corner Magazine)

CB-GASOLINE EXPLOSIONS

The Federal Communications Commission (FCC) has warned citizens' band (CB) radio operators that improper placement of transmitters in their cars may result in gasoline explosions. Especially hazardous are transmitters installed in the trunk or with bumper-mounted whip antennas because of their proximity to the vehicle's gas tank and filler pipe. The agency also warned that CB operators should not transmit while their cars are being filled with gas because sparks from the radio equipment could ignite gasoline fumes. Explosions and flash fires are rare, the FCC said, but definitely possible when loose antennas or power connections create sparks which may ignite highly flammable gasoline fumes.

CHEVETTES RECALLED

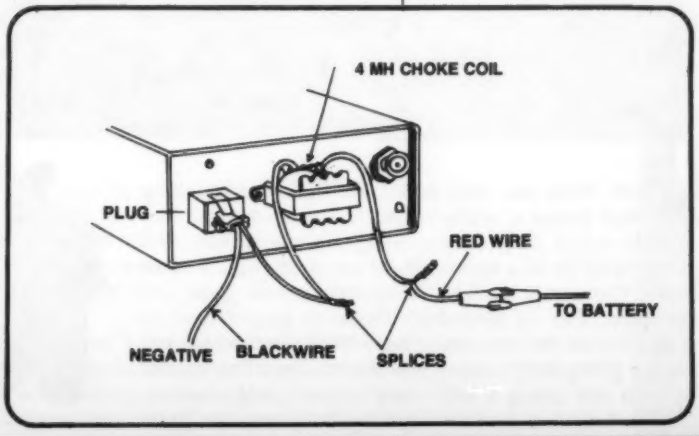
General Motors is voluntarily recalling all 1976 and 1977 Chevrolet Chevettes for a fuel-system modification. Approximately 320,000 cars are involved, 187,000 of the 1976 models and 133,000 of the 1977 series.

GM said it was recalling the cars, not because they are "defective," but only because NHTSA has found the 1977 Chevette fuel system technically may not comply with the federal standard.

The 1976 Chevettes were not subject to the same regulation, but they also will be modified, GM said, because they have the same fuel system.

Design changes in the 1978 Chevette fuel tank made the car comply with the standard, NHTSA said. GM said it is continuing to survey its accident files and still has found no reports of fires due to impacts involving Chevette gas tanks.

GM said changes under the recall will be made at no charge to owners, who will be notified as soon as parts become available.



Dad, Mom and Baby had found a really neat place to play. They were in the parking lot of a supermarket. Cars were parked everywhere. The lot sloped downhill toward the store and Mom was giving Baby's stroller a push and letting it roll down the forty-foot distance to Dad. Dad was squatting with his arms outstretched cooing babytalk at Baby, and Baby was laughing and obviously enjoying the game.

That's all, gang. No punch line. Nobody backed out and hit the stroller. The stroller didn't swerve and overturn, spilling Baby onto the pave-

Sparking Plots

This is one we call "up the down staircase." Although the parking spaces are slanted one way, the driver here is going the other. This is, *at the least*, annoying to those going the right way. Notice the shopper on the right—parked the wrong way so she'll also be going against the flow when she leaves.

ment. Nothing bad happened. Except that Dad and Mom were doing a very stupid thing, and they saw nothing wrong with it.

We'll grant you this is an extreme example of the dumb things people do in parking lots. But it points up the fact that people don't take these lots seriously as areas for auto traffic. If they did, there would be fewer fenders bent in parking lots, and there would be fewer people speeding down the aisles.

We've put together a few examples of parking lot annoyances. These parking and driving techniques (and other headaches) differ from the above example because you'll see them every day, in almost every parking lot in the country. See how many of them you're guilty of, and then see how many faults you can correct the next time you go to the shopping center.

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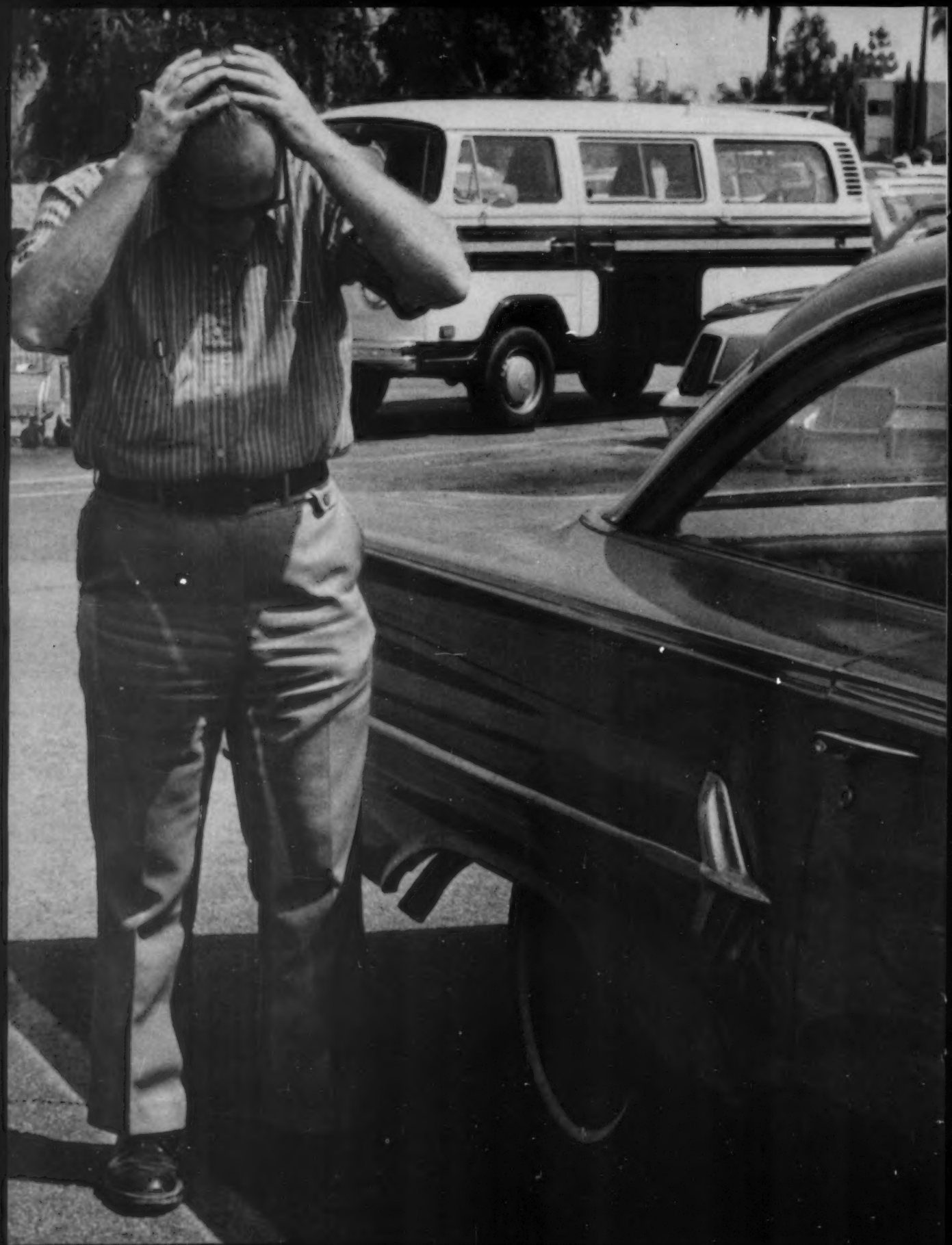


sparking plots

continued

(left) Here's where your weight loss program comes in. Do you have enough room to get in your car when someone parks like this? Only if you get in on the passenger side. **(right)** A brand-new sportscar, and he doesn't want anyone to hit it. We can hardly blame him for that, but this parking technique is very annoying when the driver takes up two, three or four spaces and the rest of the lot is full. Better he should park on the street, parallel to the curb.

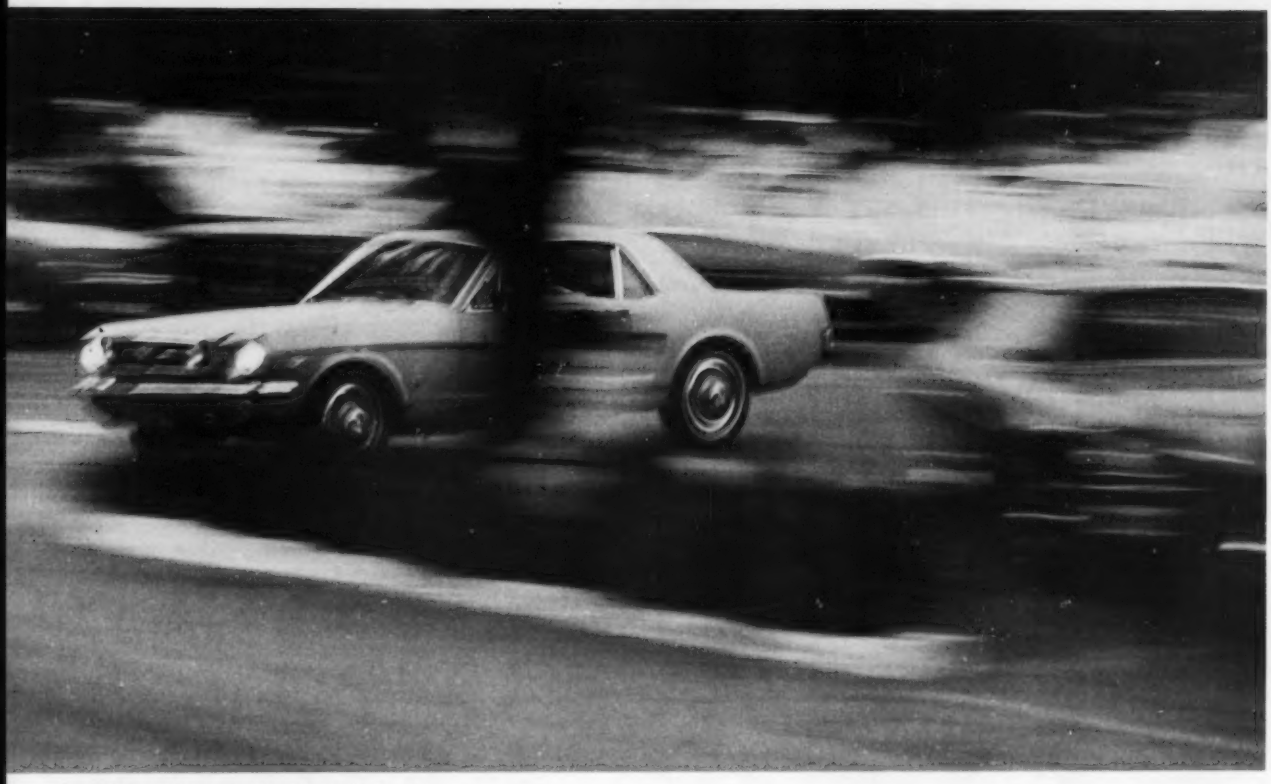
(right)
If you park in a lot, chances are someone will ding you. The only questions are: How soon? And how many times? It doesn't much matter whether your car is new or 10 years old—it's still your property and it makes you mad.

(left)
See what we mean? It's not a new car, but the owner probably treasures it as much as our friend treasures his Porche. And whoever puckered this side of the car won't be found anywhere close by.

(far right)
As if other cars weren't enough of a hazard. People are notoriously lazy with their shopping carts at the supermarket and almost always fail to return them to the proper place. Watch for rolling carts that could spoil your paint job and your temper.

Handicapped parking is provided by most businesses to make life easier for those less fortunate than you are. Keep them clear for those individuals.

And who hasn't done this—driving *across* the parking spaces. It could be argued that there's nobody nearby. But we'll argue that someone else could be speeding up the next aisle, and could be obscured by another car from your view. If you drive through parking lots this way, you've probably had *that* happen also.

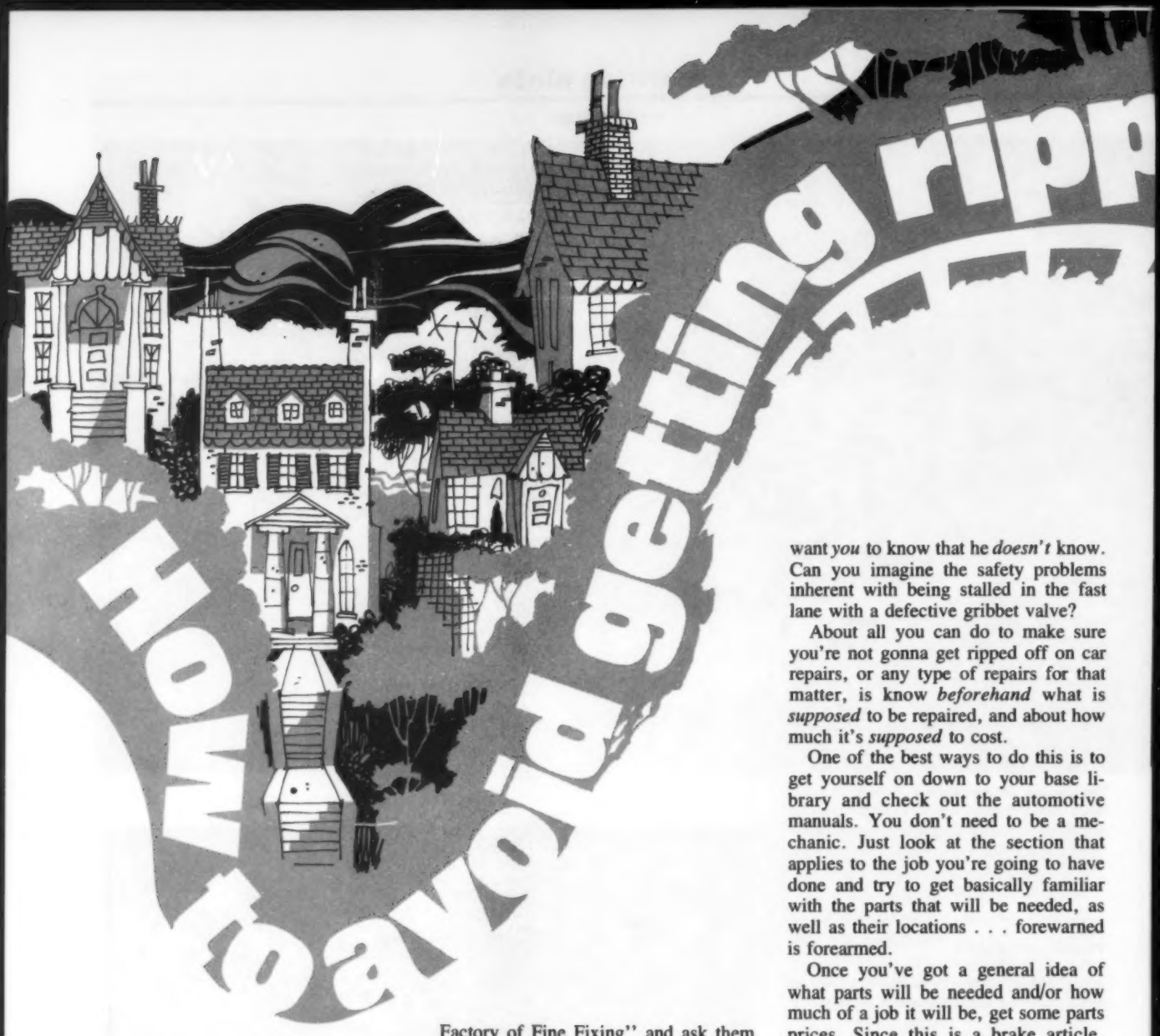


Speaking of speeding through the lot, what does *this* guy think he's doing? Trusting soul that he is, he probably thinks nobody will be anywhere near him. We're not quite that confident.

(left)
People will dart out in front of you at the most unexpected moments. That's why the speed limit in parking lots is usually 15 mph or less, and that's why you have to be alert.

(right)
Just like you have to watch for people and cars when you're entering a parking space, you have to watch when you're leaving. People and even full-size autos can appear suddenly from out of your blind spot. Look over both shoulders and back up slowly.

Sometimes people park so far over the center line that you have to rub noses to keep your car's tail out of the aisle.



Beginning this month, we're changing the format of the Backyard Mechanic just a bit. Now don't worry, you'll still see the how-to-do-it features, the hints and tips, and all the tech stuff you're used to . . . but we've had a mountain of requests from our readers asking us to take a new tack and get into "consumerism."

To us, this means that many of you are running into repairs that you don't feel you're qualified to attempt. When this happens, you take your faithful steed downtown to "Friendly Fred's Factory of Fine Fixing" and ask them to repair your broken "gribbett" valve or whatever. Friendly Fred fixes it all right . . . to the tune of $150! Now $150 is the going price for a valve job, but normally, a "gribbett" valve should only cost about $60 to fix or replace.

So what do you do? You could go to the Better Business Bureau, but you should have done that to check Fred out *before* you took work to him. You *could* have your cousin Norvill do the work, but Norvill hasn't read an up-to-date maintenance manual in 17 years and he doesn't even *know* what a gribbett valve is. Of course, Norvill *would* do the work, even if he doesn't know what he's doing, 'cause *he* doesn't want *you* to know that he *doesn't* know. Can you imagine the safety problems inherent with being stalled in the fast lane with a defective gribbet valve?

About all you can do to make sure you're not gonna get ripped off on car repairs, or any type of repairs for that matter, is know *beforehand* what is *supposed* to be repaired, and about how much it's *supposed* to cost.

One of the best ways to do this is to get yourself on down to your base library and check out the automotive manuals. You don't need to be a mechanic. Just look at the section that applies to the job you're going to have done and try to get basically familiar with the parts that will be needed, as well as their locations . . . forewarned is forearmed.

Once you've got a general idea of what parts will be needed and/or how much of a job it will be, get some parts prices. Since this is a brake article, let's compare some prices.

Parts cost for brake linings for four wheels, or linings for two wheels and disc pads for two wheels, should run between $18 and $25. Springs (if necessary) cost about $4 per wheel, or $12 for cars with four-wheel drum brakes. Wheel cylinder kits will cost about another $12. So, the parts total alone, without adding in the cost of a can of wheel bearing grease, or for grease seals, or for any extra tools you may need, is about $50.

That sounds expensive, until you read that the local brake repair shop is offering a "special." This special is "for one week only," or something

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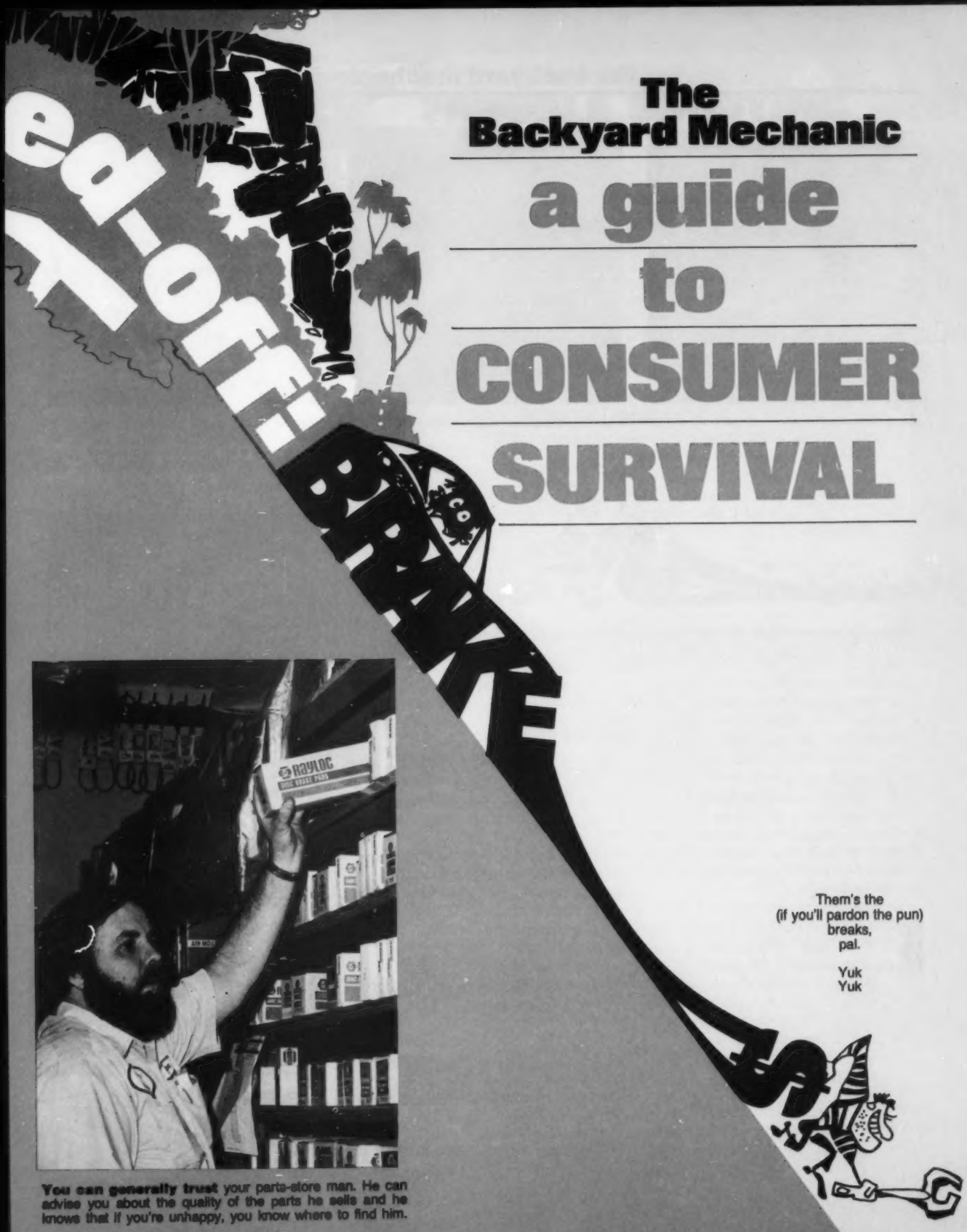
The Backyard Mechanic

a guide to CONSUMER SURVIVAL



You can generally trust your parts-store man. He can advise you about the quality of the parts he sells and he knows that if you're unhappy, you know where to find him.

Them's the
(if you'll pardon the pun)
breaks,
pal.

Yuk
Yuk

continued

As a rule, riveted shoes or pads are better than bonded ones. See text for explanation.

Newer disc pads come with this spring steel attachment that is supposed to rub against the rotor when the pad is worn down. The noise it produces will let you know you need brake work.

This white plastic check valve prevents vacuum loss in the power brake booster. It's cheap, so why not replace it at each brake job?

similar, and costs out at $70 for parts, $60 for labor, and gives a total of $130!

Some of us feel that we can buy an awful lot of hand cleaner for that $80 difference. But, some others may feel unqualified to take on a brake job, even with the assistance of the qualified people at the base auto hobby shop. Or perhaps we've let that brake job go till the last minute before our vacation and now we need brakes but don't have the time to do them. There are a lot of reasons for wanting someone else to do that brake job.

So what should you be aware of before you take your car down to Friendly Fred's brake shop? Well, like we said before, forewarned is forearmed. When you know approximately what the job will entail, and about how much it should cost, begin shopping around for a place to have the work done.

Probably the best way to pick a repair shop is word-of-mouth. Your friends can tell you about shops they've had problems with, or about those that gave great service. The Better Business Bureau can tell you if there have been an abnormal number of complaints lodged against any one firm. The State Attorney General's office can often tell you if a firm has been sued or fined for bad business practices.

Some other items to consider are: will the shop give you a *written* estimate before the job begins, and will they call you if the job requires more parts or labor than the original estimate called for? Is the shop licensed by the state (if so required) to perform the type of repairs you want? Are they willing to give you your old parts back, or at least show them to you and explain why they were replaced? Do they want you to come back at about a 500-mile interval after repairs are performed, so they can check the work?

One other hint about picking out a repair shop. Stay away from "doom-sayers." These guys will take a quick look at your car and say "geeze . . . if you drive this one more mile, you're gonna kill yourself and your kids and two innocent bystanders." This type of hype is just plain bad news . . . make tracks out of there!

What should a brake job include? Well, at a minimum, we'd recommend the following:

continued

Return springs and hold-down hardware can be cleaned up, painted, and sold as new by a dishonest mechanic. Make sure that if you're billed for new ones, they come out of a package and not out of the guy's parts bin.

TROUBLE SHOOTING

BRAKE INSPECTION & TESTING

Inspect brakes at frequent intervals for pedal reserve (clearance between pedal pad and toeboard with pedal firmly depressed, while brakes are cold). Increase pedal reserve by adjusting brake shoe to drum clearance. Brakes should be tested on dry, clean, reasonably smooth, level roadway (not with wheels jacked up). Test at different speeds both with light and heavy pressure. *CAUTION–Do not lock wheels and slide tires on roadway.*

CONDITIONS AFFECTING BRAKE PERFORMANCE

Following external conditions may affect brake performance and should be corrected before proceeding with trouble shooting of brake mechanism:

Tires—Should be same size on each side of vehicle with approximately same tread design and inflation.
Loading—Wheels should be equally loaded, as heavily loaded wheels require more braking power.
Suspension—Faulty shock absorbers, incorrect front end alignment, or loose wheel bearings may give impression brakes are too severe.

TROUBLE SHOOTING DRUM BRAKES

Low Pedal or Excessive Travel

Fluid low. Improper brake fluid. Air in system. Hoses expand under pressure. Wheel bearings or steering parts loose. Shoe and lining knock-back after violent cornering or rough road travel. Improper rear brake adjustment. Distorted shoes or linings. Master cylinder or power unit malfunction. Metering valve (for front brakes) not working. Piston and shoe assembly misaligned.

Pedal Applied; No Braking Action

Air in system. Leak past primary cup in master cylinder. Piston pushed back into bores. Hydraulic leak. Rear brakes out of adjustment.

One Wheel Drags

Front wheel bearings loose. Shoes adjusted too tight. Shoe return spring broken or weak. Piston stuck or cups distorted. Clogged line or hose. Drum out-of-round. Loose anchor pin. Distorted shoe. Defective lining.

Rear Brakes Drag

Improper adjustment. Parking brake cable frozen.

All Wheels Drag

Improper adjustment. Defective master cylinder. Improper adjustment of master cylinder push rod. Pedal linkage binding. Defective power unit. Defective proportioning valve.

Vehicle Pulls To One Side

Uneven tire treads. Worn front end parts. Incorrect front end alignment. Front wheel bearings loose. Loose steering. Loose backing plate or anchor pins. Loose or broken springs or "U" bolts. Improper lining. Improper adjustment. Defective drum. Loose or broken return spring. Defective wheel cylinder. Improper wheel cylinder size. Clogged or crimped line.

Brakes Squeak or Noisy

Improper lining. Lining loose on shoe. Foreign material on lining. Shoes scraping backing plate. Improper adjustment. Defective drum. Defective wheel cylinder. Weak or broken return springs. Loose anchor pin, wheel cylinder, or backing plate. Brake drum silencer spring missing (if equipped).

Brakes Fade (Fail to Hold)

Excessive heat build-up. Improper linings. Drums too thin. Lining soaked with fluid or oil. Improper fluid.

Pulsating Brake Pedal

Drums out-of-round. Loose brake drum. Worn or loose bearings. Bent rear axle.

Hard Pedal

Grease or fluid on lining. Improper brake lining or fluid. Improper adjustment. Pedal linkage binding. Faulty master cylinder. Glazed linings. Defective brake drums. Defective proportioning valve.

Brakes Chatter

Improper shoe adjustment. Loose backing plate. Foreign material on lining. Weak or broken return spring. Loose wheel bearings. Drum out-of-round. Distorted or misaligned shoes. Frozen strut rod bushings.

Snapping Noise In Front End

Grooved backing plate pad. Lack of lubrication on moving parts. Loose drums or backing plate. Loose or worn front end parts. Defective lining.

Power Brake Unit Does Not Boost

Test For Power Unit Operation—Stop engine and apply pedal pressure several times to remove all vacuum from system. Hold pressure on pedal and start engine. Pedal will move slightly forward when cylinder is operating.

Power Unit Does Not Operate—Vacuum check valve stuck closed. Vacuum pipe bent, broken or closed. Insufficient engine vacuum. Blocked air inlet. Air valve sticking in diaphragm. Faulty diaphragm. Faulty piston seal. Internal leaks.

continued

TROUBLE SHOOTING

continued

TROUBLE SHOOTING DISC BRAKES

Low Pedal or Excessive Travel

Fluid level low. Air in system. Defective brake lines. Defective caliper. Improper rear brake adjustment. Distorted shoes or linings. Master cylinder or power unit malfunction. Misaligned piston and shoe assembly. Low pedal after hard cornering or driving on rough road (pump pedal to correct).

Hard Pedal

Master cylinder or power unit malfunction. Brake fluid, oil, or grease on linings. Lines or hoses kinked, dented, or collapsed. Cylinder cups swollen. Linings worn. Incorrect lining. Frozen or seized pistons. Metering valve or cylinder bores corroded. Pedal linkage binding. Defective proportioning valve.

Pulling or Grabbing

Defective master cylinder. Defective caliper. Grease or fluid on linings. Defective brake lines. Metering valve malfunctioning. Power unit malfunctioning. Defective rotor. Loose or broken front end parts. Defective rear drum. Unmatched tires. Loose or broken rear springs.

Pedal Goes Slowly To Floor

Air in system. Hoses or lines soft (expand under pressure) or damaged. Master cylinder primary cup damaged, bore worn, or corroded. Improper fluid. Bleeder screw open.

Noise, Chatter, or Pulsation

Defective rotor. Disc pad or rotor out of parallel. Anti-rattle spring missing or out of position. Excessive clearance between disc pad and caliper. Disc pad rubbing on caliper housing. Caliper binding on mounting bolts. Rear drums defective. Wheel bearings loose. Wheel nuts loose. Wear sensor contacting rotor.

Dragging Brakes

Defective brake line or hose. Defective master cylinder. Residual pressure valve installed in outlet to front brakes. Power unit push rod out of adjustment. Sticking pedal linkage. Metering valve defective or incorrectly installed. Defective power unit. Defective caliper. Defective proportioning valve.

Rear Brakes Skidding (Hard Pedal Application)

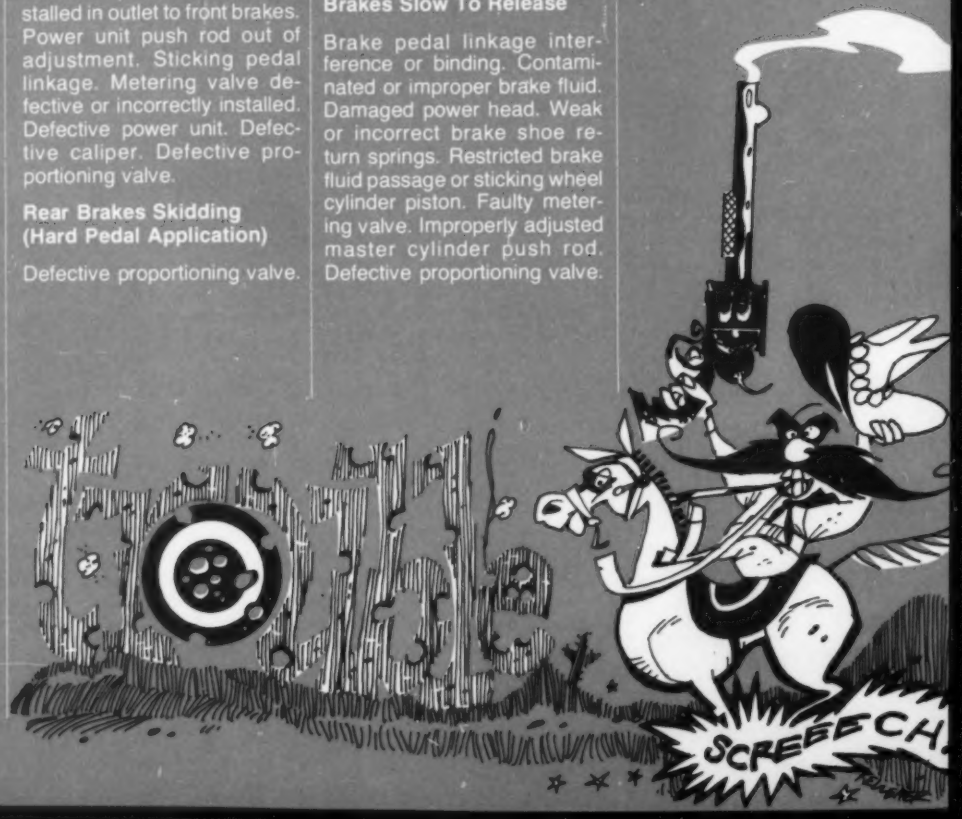
Defective proportioning valve.

Brakes Slow To Respond

Restricted air passage in power head. Contaminated or improper brake fluid. Leaking vacuum system. Glazed brake lining. Restricted fluid passage or sticking wheel cylinder piston. Faulty metering valve. Pedal linkage interference or binding. Defective proportioning valve.

Brakes Slow To Release

Brake pedal linkage interference or binding. Contaminated or improper brake fluid. Damaged power head. Weak or incorrect brake shoe return springs. Restricted brake fluid passage or sticking wheel cylinder piston. Faulty metering valve. Improperly adjusted master cylinder push rod. Defective proportioning valve.



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Drum brake overhaul:

- New brake linings all around
- New front grease seals
- Resurface (grind) all drums
- 4 new (or at least rebuilt) wheel cylinders
- Replacement of return springs and hold-down hardware
- Repack front wheel bearings
- Master cylinder inspection
- Bleed and flush hydraulic system
- Road test and final brake adjustment

For Disc/drum systems:

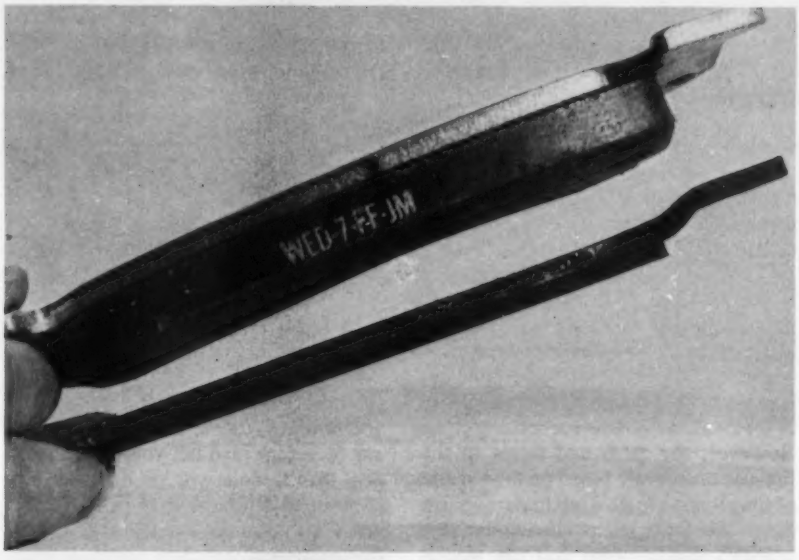
- New disc pads and new linings
- New disc hardware, new return springs and hardware
- Rotors resurfaced or replaced, drums turned (ground)
- Calipers overhauled or replaced, wheel cylinders too
- New front grease seals
- Repack front wheel bearings
- Master cylinder inspection
- Bleed and flush hydraulic system
- Road test and final brake adjustment

If a shop will do all of these things for you as a normal part of their brake overhaul routine, you've probably got a good shop. If the shop tells you that any of the steps aren't necessary, get it in gear and move on to another shop.

As in any form of business, there are dishonest-type bad persons out there just waiting to take advantage of you. This is particularly true if you're a woman alone. Unless you gals are experienced mechanics, you've got a better-than-average chance of being ripped off. Even though it may go against your grain, one of the best ways to prevent this is to take a man along when you make contact with the shop. Rightly or wrongly, a shop is less inclined to horse you around if there's a guy there with you. He doesn't need to know anything about brakes, or even cars, he's just there to look pretty and nod his head sagely. Window dressing, actually. Any body will do for this purpose.

There are a lot of ways to get ripped off on brake jobs. Read the following items, and be on the lookout for them.

If drums need to be reground, and most do, a bad guy will tell an unsuspecting customer that the drums were "out of limits," or worn past allowable



Thickness of old vs new pads. It doesn't happen very often, but a bad guy will tell you he installed new ones when actually he just left the old ones on. Check it out by removing a tire and looking through the caliper. It's easy to tell when new ones have been installed.

dimensions, and new ones were needed. He puts your old drums back on and charges you for new ones. An inspection after repairs are completed can avoid this scam. New drums will be painted on the outside, or at least be clean metal and not rusty.

A bad guy will just clean up wheel cylinders and charge you for new ones, or for a rebuild. He can also take re-

continued

turn springs he's kept around for this purpose, and show them to you and say, "The springs have lost their tension, so we hadda replace 'em."

In a related area, a funky shop will ask the customer if he or she would like the wheel bearings repacked and the tires rotated. Since most automotive tech people recommend these maintenance items, the customer says, "Yes." That's all well and good. But what a bad shop will do is charge you "flat-rate" for these items. The flat-rate manual lists the amount of time that a particular job should take. For instance, "repack front wheel bearings . . . 1.5 hours." Same for rotating tires. However, the rates and times in the flat-rate manual are based on the amount of time it takes to do a job from the start. Since the brake shop already has the bearings disassembled and the wheels off, it takes them about three minutes to do the jobs. Then, they charge you by the flat-rate manual. Boo, bad.

The bad shop will, while working on your brakes, squirt oil on the shocks, punch a hole in the muffler, or slice the tires with a knife. When you come to pick the car up, they'll tell you that the shocks are bad, the muffler's about gone, and you need two new tires. Hiss. Protect yourself against this ploy by knowing the condition of these parts *before* the car goes to the shop. Granted, these *can* be legit items of concern, but beware.

A shop can charge you for premium-quality linings or pads, and then put on cheap ones. You won't know about it till the el-cheapo items wear out in 10,000 miles. There isn't much you can do about this one. However, you'll probably be better off by specifying riveted, rather than bonded, brake shoes. With riveted shoes, or linings, the friction material is attached to the metal shoe with rivets, rather than bonded on with adhesive as in a bonded shoe. Riveted shoes generally are better quality shoes. And they provide you with a benefit in that when the shoe wears down, the rivet heads will be exposed and begin to scrape against the drum or rotor. This will make a noise that should tell you it's time to rebrake. Bonded shoes won't begin to make noise until the friction material is all gone and the steel of the shoe contacts the drum. The steel shoe can really tear up a drum or rotor, while the soft brass rivets don't do nearly as much damage.

The bad guys will carry a small tube of brake fluid with them while making an inspection of the brakes. They'll pull a cap off of a wheel cylinder and spray the brake fluid inside. Then they'll show you the "leaking" wheel cylinder.

In the same vein, they'll squirt brake fluid up under the dash where there is a rod that connects the brake pedal to the master cylinder. Then they'll show you how the seals in the master cylinder are "leaking" and tell you what a good deal they'll make you on a master cylinder rebuild.

Other little things it would help you to know are:

- Be sure the mechanic checks the brake lines and hoses, particularly where the hose joins the metal fittings. Check for leaking, kinking, or cracking.
- Check the white plastic check-valve mounted on the master cylinder vacuum unit. This valve prevents air from getting into the vacuum booster diaphragm . . . air will cause a loss of vacuum and a loss of power-assist for the brakes. Scarey time!
- The master cylinder should be checked by running a finger down into the bottom of both front and rear portions of the fluid reservoir. Check for sludge or residue which could mean old fluid or deterioration of the brake lines. "Pulling" disc brakes can often result from this residue being pumped from the master cylinder to the caliper cylinder. The residue gets built-up on caliper cylinder walls and causes the piston to hang-up. This will cause the pads to be in constant contact with the rotor. This can cause pulling when the brakes are applied, and can also prematurely wear out the pad or cause hot spotting of the rotor due to the constant friction.
- Don't get sold by some sharpie salesman on "competition-rated" linings and pads. These competition linings and pads are tops for racing, but they are *bad news* for everyday use. They are designed to function only when very hot . . . just the opposite of regular brake components. When they're "cold," as in normal driving, they take a *lot* of brake pedal pressure to operate. They're also noisy, useless when wet, cost a lot and wear out more quickly than regular pads or linings. "Heavy-duty" or premium pads and linings . . . OK. Competition pads or linings . . . not unless you're gonna use the car for racing exclusively.
- If you're planning on doing a lot of out-of-the-area travel, consider getting the job done at one of the major service centers like Goodyear, Firestone, Midas, Sears, Penney's or Ward's. They are national stores and one store will generally honor the warranty of another store in the same chain, even though it's across the country.
- Remember that just because a lot of people get their work done at service centers instead of independent mechanics doesn't necessarily mean that the service store is so hot. Generally, it means that that store does work on credit or honors the company charge card. A small mechanic demands cash. Service centers can be a good deal, but so can the reputable independent mechanic.
- *Always* have the drums or discs "turned" or machined, even though you feel you just need linings or pads. The machining makes the friction surfaces seat much better against one another, thereby giving better braking performance. Machining also removes hot spots (hard areas on the drum or rotor) which cause shortened lining and pad life. Machining also eliminates warped or out-of-round conditions which can affect handling.

If you familiarize yourself with the job to be done, get a reputable shop to do the work, and know the condition of the car when it goes into the shop, the chances are excellent that you won't get ripped off. A little bit of time invested in reading this article and following the tips we've presented could be well worth your time and money. It can also help with your peace of mind. Remember, you can push a car without an engine, but you'll have a hard time getting it stopped without brakes!

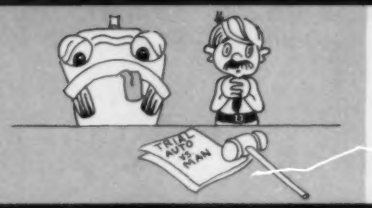
(above)
If the mechanic tells you he resurfaced your rotors but they look shiny, like this, he's a bad person. Resurfaced rotors will have a satiny surface with tiny machining marks across the face of the rotor.

(left)
Going too long without replacing worn pads will destroy the brake rotor by grooving it beyond repairable limits. To machine away these grooves, too much metal would have to be removed, making the rotor too thin.

(below)
How can you tell how thin a rotor is allowed to be? Most rotors have factory minimums cast right into them. If a bad guy tells you he had to replace the rotors because they were too thin, make him show you the minimum dimensions and then have him measure the thickness in your presence. Forewarned is forearmed!

DRIVER [illegible] *Tom Mik-* [illegible] *am of Goodyear Tire Co.* [illegible] *en of Action Auto* [illegible] *Sun Nuys* [illegible] *dino, Calif., for* [illegible] *e preparation of* [illegible] *slide.*

LETTERS to the EDITOR — BACKfire



WHICH IS THE BEST

Regarding the article "Loss Experience Identifies Best & Worst '78 Models" on page 12 of the Jan '79 DRIVER, the old cliche of "figures can lie and liars can figure" may apply. I found the information presented most informative; however, from a systems approach, it was only a "half truth." The car is half the system, the driver is the other half. With any man-machine interface the entire system must be investigated to arrive at a conclusion. Some good investigative reporting by your staff could be devoted to analyzing the driver's age group, sex and marital status to determine if there is a correlation between how HLDI ranks the '78 cars in collision losses after including the following factors: (1) Male vs female drivers; (2) Under 25 vs 25 and older, and (3) Married vs unmarried.

It would seem to me that a Chevrolet Corvette would appeal more to an unmarried male driver under 25 whereas a Buick Skylark would appeal to a cost conscious married family man between his mid-30s to late 50s. If my assumptions are correct, the HLDI information could be expected. I don't know where I fit in, except that on the HLDI list my car is 5th worst at 171. I'm married, 38 years old and drive a 280Z.

I would be most interested to see the other half of this story.

Maj Stephen C. Gresley, USAF
HQ AFSC/SDWR
Andrews AFB, MD 20334

Right you are. Certain kinds of drivers choose certain kinds of cars. And personality, age, income–many factors affect driving performance. Note, however, that the Lincoln Mark V is high on the collision-loss list although it is probably not owned by many young, unmarried drivers under 25 (the population group with highest accident experience). Maybe this car appeals to "risk takers." Or maybe it's just mighty expensive to repair.

For you readers who missed the article, the insurance companies have listed the 10 best and 10 worst cars solely on the basis of the average collision loss they have paid per insured vehicle. Of the 10 best, nine are either four-door models or station wagons, which also seems to support the idea that bigger cars suffer less damage in collisions.

OIL CHANGE TIP

The Feb '79 DRIVER quite nicely illustrates how to change engine oil and oil filter. Please tell your readers to fill the oil filter with clean oil before installing it on the engine.

It takes about 5 seconds for the oil pump to fill the filter before the engine starts getting any oil. This becomes increasingly important as the age of the vehicle increases because the soft outer surface of the bearings wears away exposing harder materials that will accelerate the wear of major components such as crankshafts and camshafts.

CWO3 R.A. Nashif, USN
USS John Paul Jones (DDG-32)
FPO San Francisco 96601

HELMETS AND BROKEN NECKS

Regarding your article in Feb '79 DRIVER on "Helmets and Broken Necks," I would like to express my opinion.

I am a parachute rigger in the Navy with some experience with helmets, accident victims, etc. I am also a very experienced motorcycle enthusiast, which is more than I can say for some so-called experts.

I will not argue helmets. I think in 90% of accidents they are beneficial. I've seen a lot of friends, civilian and military, in serious accidents and the helmet helps . . . saves lives. What about your automobile drivers? Would they be better off with helmets? You know it!!! But will you and your wives wear them? Hell, no! Might mess up your hair.

Our forefathers left the "old country" for their freedoms. Where are we to go? This is a land of the free, isn't it? Just keep adding laws . . . We are on our way to Communism.

I'm really wondering if we're progressing???

What's your idea on better driver education throughout the U.S.? Stiffer fines on accidents? Maybe people would be more aware – example "I didn't see him." Motorcyclists are not as dangerous as the automobile drivers. Stiffer qualification for driving exams? Everything is dangerous. Let's do it the safest way possible – but also get off personal freedoms!

PRAN J. T. Henderson, USN
(Address Unknown)

Aw, come on now! You don't really think helmet laws are communistic, do you? Or socialistic or capitalistic, for that matter.

JUNK IN THE TRUNK

In regards to "In Your Trunk with a Load of Junk" (Feb '79 DRIVER), your point is well taken about *not* keeping the fire extinguisher in there since it might be inaccessible when you need it most. For the same reason, I keep the following items under the driver's seat (with spares in the trunk): Ice scraper, flashlight, first aid kit stocked to control bleeding, and a warning device (a folding triangle is great for this because you can assemble it and wave it like a flag while running down the road to set it up). If it will fit, that's also a good place for the extinguisher so it won't be a hazard to a passenger's legs.

I would add to the trunk collection a plastic jug of premixed windshield fluid and one of antifreeze (or water in a hot climate), and a rubber hammer, which is useful for lots of things besides putting the hubcaps back on. If it is difficult or impossible to pour fluids from containers into your radiator or gas tank, a funnel tube could be a lifesaver.

SKC Dennis J. Hopper, SN
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Thanks, those are good ideas.

Your February edition finally arrived in our office (dog-eared as usual from other readers) and I thought your article entitled "In Your Trunk with a Load of Junk" was especially appropriate reading for people with POVs overseas as well as those driving in CONUS.

With regards to fire extinguisher placement, however, I strongly nonconcur with your recommendation to install them under the dashboard on the passenger's side. To avoid shattered kneecaps in the "crunch," the extinguisher is best mounted *on the floor* beside or in front of the driver's seat. Placed there, it's handy but out of the way. (A piece of matching carpet wrapped around it makes a really smart looking installation!)

Additionally, when building your travel kit, keep a set of spare fuses in the first aid kit. They take little room and investment – and you'll always know where they are. Also, to save time when changing the next flat (probably at night in the rain!), wrap a piece of tape around the one socket on your T-wrench that fits your lug nuts. You'll be glad you did!

Keep up the good work!!

Maj John G. Tockston, USAF
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Your point may be valid, depending on the size of the car and how far forward the passenger's seat is, but we tend to think the passenger's knees would be in no danger if he were securely belted in. However, if there's room beside (or in front of or even under) the driver's seat for the extinguisher it could be mounted there. The important part is to keep it within easy reach in case of an emergency. Your other hints are also good; thanks!

AN EXCELLENT DRIVER?

I am enclosing an article from the local paper here in Fairfax County, Virginia. I shudder when I realize that people like this are really on the road. I have the feeling that 2d Lt D-Aloise (Backfire, "An Offensive Driver," Feb '79) has never driven in the Washington, D.C. metropolitan area, including Maryland and Virginia, since he has completely described the vast majority of drivers in this area.

My wife and I not only "drive as though our lives depend on it" but say a little prayer each time we go out. After reading about the "self-styled driver" in the enclosed article, it has helped!

YNC M.J. Twiford, USN
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Room 2534
Washington, DC 20520

The article M.J. sent us was written by a 23-year-old woman who describes why she considers herself to be an excellent driver. We wish we could print it all, but here's just one of her "good-driving" rules: I drive a '74 Duster with a V8 engine. I know that I can whip a Volkswagen Rabbit, Honda car, and other small, innocuous vehicles. I can also beat old ladies in run-down station wagons. Therefore, I take all of this information into account when approaching a four-way stop. If the opposing vehicle is a truck, Lincoln Continental or Trans Am, it goes first, regardless of who got there first or who is on the right. If, however, I am up against one of the harmless creatures mentioned above, I go first." Yes, folks, people who think like this are on the road with you.

INTERSECTION ETIQUETTE

Your article "Intersection Etiquette" in the Mar '79 issue of DRIVER does not address one intersection problem that has caused accidents, and with the disagreement as to right-of-way from those I've queried, it's amazing that there haven't been more accidents.

I refer to the situation of two cars arriving at the same time at a "T" intersection (one road terminating at a through road) with no stop or yield signs. This layout occurs in many residential areas. If the car on the terminating road is on the right, who has the right of way? Most of those whom I've asked feel that the through road has the right of way, but in the case of an accident (where large shrubbery contributed by obstructing vision at the corner), the police fell back on the rule of "the car on the right."

Another point that was addressed in the article (page 19) is not totally correct. It states that "U-turns are allowed here in California unless signs or street markings prohibit it." Has the restriction of no U-turns in business districts been removed from our motor vehicle code?

Mr. John L. Wesesky
6510 TESTW/TEES
Edwards AFB, CA 93523

No, that one's still in effect and it's also illegal to make a U-turn in front of a fire station. We skipped an involved discussion of the U-turn because, as we said, the laws may be different in other states. Readers, be sure to check your own state's laws governing U-turns.

The intersection situation you mention points up that your best defense against an accident is caution. When in doubt, let the other guy go.

BACKYARD MECHANIC REPRINTS

Our supply of Volume I of "The Backyard Mechanic" is depleted as of many, many months ago. We are still receiving requests we cannot fill. Those of you who are interested in obtaining a copy can do so by sending your check in the amount of $1.25 to the Consumer Information Center, Pueblo, CO 81009.

We still have a few copies of Volume II which can be obtained by sending us your request. When this supply is depleted you may obtain Volume II through the Consumer Information Center at $1.60 per copy. . . . . .Ed.

Address your letters to:
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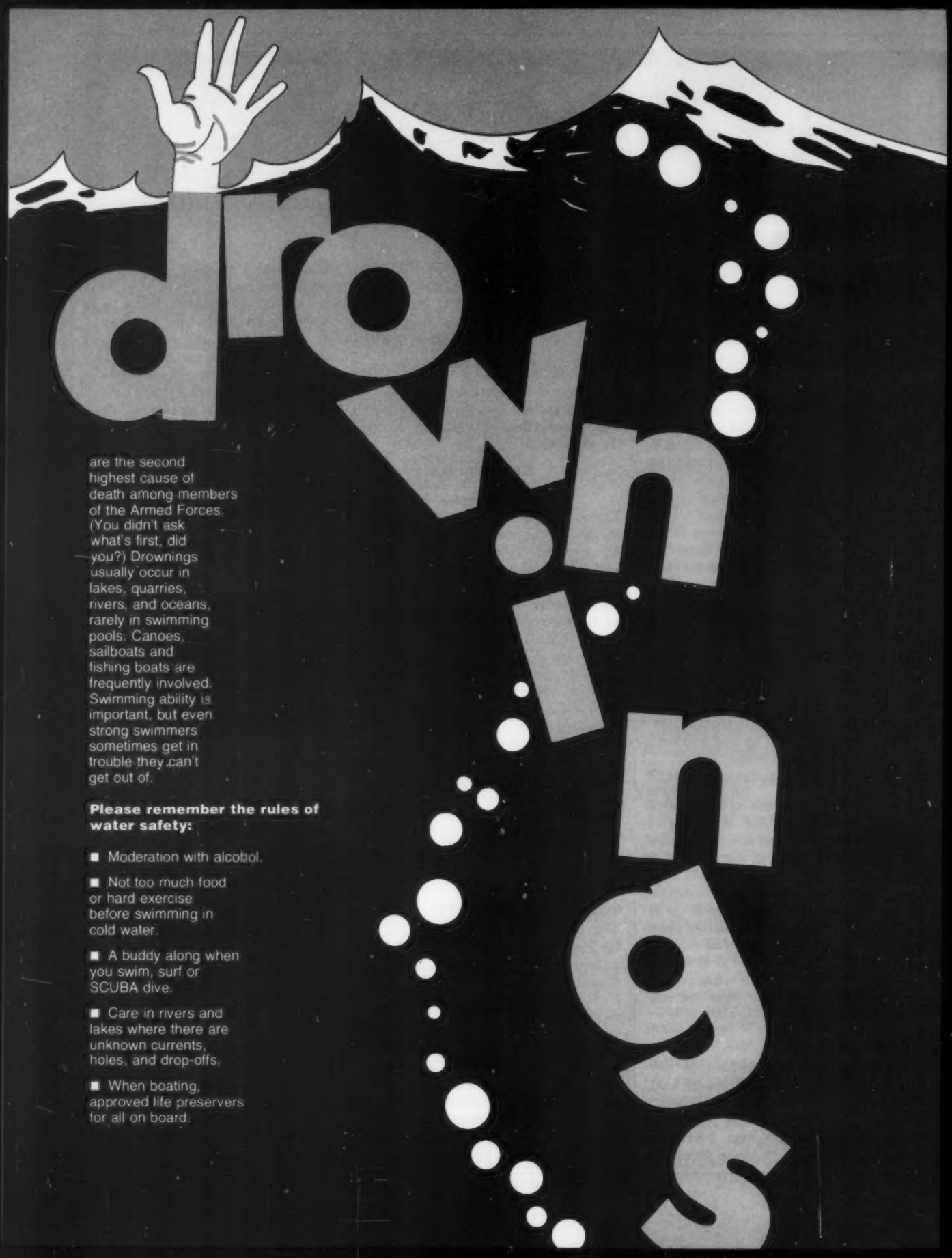

are the second highest cause of death among members of the Armed Forces. (You didn't ask what's first, did you?) Drownings usually occur in lakes, quarries, rivers, and oceans, rarely in swimming pools. Canoes, sailboats and fishing boats are frequently involved. Swimming ability is important, but even strong swimmers sometimes get in trouble they can't get out of.

Please remember the rules of water safety:

- Moderation with alcohol.
- Not too much food or hard exercise before swimming in cold water.
- A buddy along when you swim, surf or SCUBA dive.
- Care in rivers and lakes where there are unknown currents, holes, and drop-offs.
- When boating, approved life preservers for all on board.